

Birds associated with bamboo forests in eastern Acre, Brazil

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SUMMARY.—Rainforest habitats dominated by arborescent bamboo of the genus *Guadua* are common in south-west Amazonia. We gathered data on the avifauna associated with this type of forest in south-west Brazil, in eastern Acre, during November 2006. Birds were surveyed using mist-netting, observations and recordings of vocalisations, and a total of 266 bird species was recorded, 20 (7.5%) of which are considered to be strictly associated with bamboo forest. Our survey also extended the known ranges of several bamboo forest specialist species in south-west Amazonia, and confirmed the importance of this habitat type for regional biodiversity.

Open forests dominated by arborescent bamboo of the genus *Guadua* cover some 180,000 km² of the south-west Amazon basin, including south-east Peru, northern Bolivia and western Brazil (Nelson *et al.* 1997, Silveira 2005). In the Brazilian state of Acre, these bamboo forests are known as *tabocais*, and form a mosaic of habitats together with Ombrophyllous open forest with palms, open floodplain rainforest and dense rainforest (Acre 2000). Amazonian bamboo forests are unique ecosystems with a rich fauna of vertebrates (Conover 1994, Servat 1996, Kratter 1997, 1998, Lebbin *et al.* 2007) and invertebrates (Conover 1994, Louton *et al.* 1996).

Some bird and mammal species are considered to be bamboo forest specialists, and are only found in areas where this type of forest is present (Kratter 1997, Haemig 2006a,b). Stotz *et al.* (1996) identified 29 bird species in the southern Amazon basin that are closely associated with these *tabocais*, although this number may be an under-estimate, which hypothesis is supported by the recent discovery of a new bird species, Rufous Twistwing *Cnipodectes superrufus*, which is restricted to bamboo forests (Lane *et al.* 2007, Tobias *et al.* 2008). This discovery further emphasises the need for more detailed studies of the unique, but poorly known fauna of these bamboo forests.

With the aim of providing more reliable information on the bird fauna of this type of habitat, we conducted an ornithological expedition to the eastern portion of the Brazilian state of Acre. In addition to a general overview of the study area and the data collected, we present an annotated list of the records of the species most relevant to understanding the ecological characteristics of this unique forest type.

Methods

Study area.—The area surveyed is located at km 11 of the Jarinal road, an offshoot of the Transacreeana highway, in the east of the Brazilian state of Acre (09°54'16.5"S, 68°28'26.6"W; Fig. 1). Ornithological surveys were conducted on 11–23 November 2006, at the start of the rainy season, in an area of open *terra firme* forest dominated by bamboos associated with palms. The area surrounding the forest is mainly cattle pasture, with scattered plots of subsistence agriculture. The forest has been subject to selective logging of hardwood trees by local residents in recent years, for both subsistence and commercial purposes.

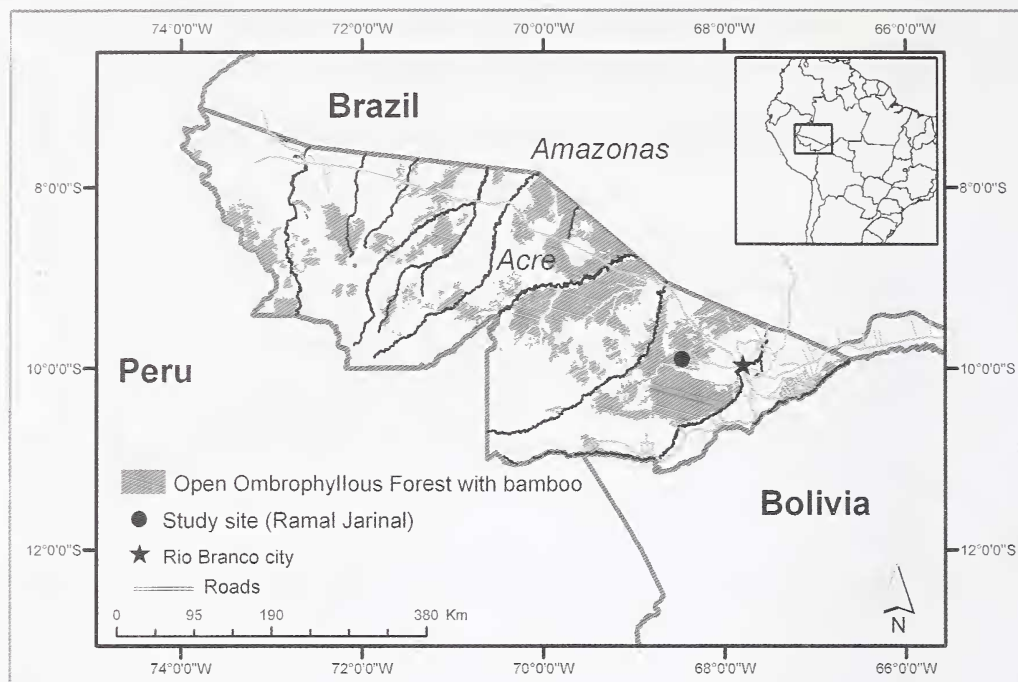


Figure 1. Location of the study site.

Surveys.—The inventory used two complementary approaches. Quantitative sampling was conducted using ten 36 mm-mesh mist-nets, 2 m high by 12 m long, whilst qualitative records were made using binoculars, and recordings of vocalisations were made using a Sony TCM 5000 tape-recorder. Recordings will be deposited at the Museu Paraense Emílio Goeldi (MPEG) in Belém, Pará. Mist-nets were set along transects within the forest, remaining at each location for three days. The nets were opened at dawn (05.30 h) and were generally kept open until 15.00 h, to maximise the number of captures. In some cases, voucher specimens were collected in order to confirm the presence of the species in the study area. These specimens were prepared using standard taxidermy techniques.

Collection of specimens was authorised by the Brazilian Federal Environment Institute (IBAMA) through licence number 044/2006–COFAN. All specimens are deposited at the MPEG. Nomenclature follows that of the Brazilian Ornithological Records Committee (CBRO 2008).

Results

A total of 266 bird species (Table 1) was recorded during the 12 days of sampling, which encompassed 916 net-hours of mist-netting and eight hours of recording. Twenty of the species are associated with or restricted to lowland bamboo forests in south-west Amazonia, i.e. 7.5% of the total, and almost 70% of the species recognised by Stotz *et al.* (1996) as being predominantly associated with bamboo forests of the southern Amazon basin. An annotated list of species most relevant to understanding the ecological characteristics of this unique forest system is presented below.

TABLE 1

List of families and species of birds recorded on the Jarinal road, eastern Acre, Brazil. Habitat codes: BF = open bamboo forest; R = reservoir; OA = open area; OP = open area with cattle pasture; FE = forest edge. Records: S = specimen deposited at the MPEG, Belém; O = sight record; V = vocalisation sound-recorded. Asterisks denote species considered to be closely associated with bamboo forest in south-west Amazonia as defined by Stotz *et al.* (1996), Kratter (1997) and our observations.

Family (number of species)	Species	English name	Habitat	Record
Tinamidae (6)	<i>Tinamus tao</i>	Grey Tinamou	BF	V
	<i>Tinamus guttatus</i>	White-throated Tinamou	BF	V
	<i>Crypturellus cinereus</i>	Cinereous Tinamou	BF	S, V
	<i>Crypturellus soui</i>	Little Tinamou	BF	V
	<i>Crypturellus undulatus</i>	Undulated Tinamou	BF	V
	<i>Crypturellus atrocapillus</i>	Black-capped Tinamou	BF	V
Cracidae (2)	<i>Ortalis guttata</i>	Speckled Chachalaca	BF	O, V
	<i>Penelope jacquacu</i>	Spix's Guan	BF	O, V
Odontophoridae (1)	<i>Odontophorus gujanensis</i>	Marbled Wood Quail	BF	V
Podicipedidae (1)	<i>Tachybaptus dominicus</i>	Least Grebe	R	O
Ardeidae (6)	<i>Tigrisoma lineatum</i>	Rufescent Tiger Heron	R	O
	<i>Butorides striata</i>	Striated Heron	R	O
	<i>Bubulcus ibis</i>	Cattle Egret	OP	O
	<i>Ardea cocoi</i>	Cocoi Heron	R	O
	<i>Ardea alba</i>	Great Egret	R	O
	<i>Egretta thula</i>	Snowy Egret	R	O
Threskiornithidae (1)	<i>Mesembrinibis cayennensis</i>	Green Ibis	R	O
Cathartidae (4)	<i>Cathartes aura</i>	Turkey Vulture	OA	O
	<i>Cathartes melambrotus</i>	Greater Yellow-headed Vulture	OA	O
	<i>Coragyps atratus</i>	Black Vulture	OA	S, O
	<i>Sarcoramphus papa</i>	King Vulture	OA	O
Accipitridae (9)	<i>Elanoides forficatus</i>	Swallow-tailed Kite	OA	O
	<i>Gampsonyx swainsonii</i>	Pearl Kite	OP	O
	<i>Ictinia plumbea</i>	Plumbeous Kite	FE	O
	<i>Leucopternis schistaceus</i>	Slate-coloured Hawk	FE	S, O
	<i>Buteogallus urubitinga</i>	Great Black Hawk	FE	O
	<i>Busarellus nigricollis</i>	Black-collared Hawk	FE	O
	<i>Rupornis magnirostris</i>	Roadside Hawk	FE	O
	<i>Buteo albicaudatus</i>	White-tailed Hawk	OP	O
	<i>Buteo nitidus</i>	Grey Hawk	FE	O
Falconidae (7)	<i>Daptrius ater</i>	Black Caracara	FE	O, V
	<i>Ibycter americanus</i>	Red-throated Caracara	FE	O, V
	<i>Milvago chimachina</i>	Yellow-headed Caracara	OP	O
	<i>Herpotheres cachinnans</i>	Laughing Falcon	FE	O
	<i>Micrastur ruficollis</i>	Barred Forest Falcon	BF	S
	<i>Micrastur gilvicolis</i>	Lined Forest Falcon	BF	V
	<i>Falco rufigularis</i>	Bat Falcon	FE	O
	<i>Psophia leucoptera</i>	Pale-winged Trumpeter	BF	O
Rallidae (1)	<i>Porphyrio martinica</i>	Purple Gallinule	R	O
Charadriidae (1)	<i>Vanellus cayanus</i>	Pied Lapwing	OP	O, V
Scolopacidae (1)	<i>Tringa flavipes</i>	Lesser Yellowlegs	R	S, O
Jacaniidae (1)	<i>Jacana jacana</i>	Wattled Jacana	R	O
Columbidae (6)	<i>Columbina talpacoti</i>	Ruddy Ground Dove	OP	S, O
	<i>Patagioenas cayennensis</i>	Pale-vented Pigeon	BF	O, V
	<i>Patagioenas plumbea</i>	Plumbeous Pigeon	BF	V
	<i>Patagioenas subvinacea</i>	Ruddy Pigeon	BF	V

Psittacidae (12)	<i>Leptotila rufaxilla</i>	Grey-fronted Dove	BF	S
	<i>Geotrygon montana</i>	Ruddy Quail-Dove	BF	V
	<i>Ara macao</i>	Scarlet Macaw	BF	O
	<i>Ara chloropterus</i>	Red-and-green Macaw	BF	O
	<i>Ara severus</i>	Chestnut-fronted Macaw	BF	O
	<i>Orthopsittaca manilata</i>	Red-bellied Macaw	BF, FE	O
	<i>Primolius couloni</i>	Blue-headed Macaw	BF	O
	<i>Aratinga leucophthalma</i>	White-eyed Parakeet	BF, FE	S, O
	<i>Aratinga weddellii</i>	Dusky-headed Parakeet	BF, FE	E, O
	<i>Brotogeris cyanoptera</i>	Cobalt-winged Parakeet	BF	E, O
	<i>Pionites leucogaster</i>	White-bellied Parrot	BF	O
	<i>Pionus menstruus</i>	Blue-headed Parrot	BF	O, V
	<i>Amazona ochrocephala</i>	Yellow-crowned Parrot	BF	O, V
Cuculidae (6)	<i>Amazona farinosa</i>	Mealy Parrot	BF	O, V
	<i>Coccyzus minuta</i>	Little Cuckoo	BF	O
	<i>Piaya cayana</i>	Squirrel Cuckoo	BF	O
	<i>Piaya melanogaster</i>	Black-bellied Cuckoo	BF	O
	<i>Crotophaga ani</i>	Smooth-billed Ani	OP	O
	<i>Dromococcyx phasianellus</i>	Pheasant Cuckoo	BF	S, V
	<i>Dromococcyx pavoninus*</i>	Pavonine Cuckoo	BF	S, V
Strigidae (7)	<i>Megascops choliba</i>	Tropical Screech Owl	BF, FE	V
	<i>Megascops usta</i>	Southern Tawny-bellied Screech Owl	BF	V
	<i>Lophotrix cristata</i>	Crested Owl	BF	V
	<i>Pulsatrix perspicillata</i>	Spectacled Owl	BF	V
	<i>Glaucidium brasilianum</i>	Ferruginous Pygmy Owl	BF	V
	<i>Athene cunicularia</i>	Burrowing Owl	OP	O, V
	<i>Rhinopteryx clamator</i>	Striped Owl	BF, FE	V
Apodidae (2)	<i>Chaetura brachyura</i>	Short-tailed Swift	OA	O
	<i>Thachornis squamata</i>	Fork-tailed Palm Swift	OA	O
Trochilidae (8)	<i>Glaucis hirsutus</i>	Rufous-breasted Hermit	BF	S
	<i>Phaethornis ruber</i>	Reddish Hermit	BF	V
	<i>Phaethornis hispidus</i>	White-bearded Hermit	BF	S
	<i>Phaethornis bourcierii</i>	Straight-billed Hermit	BF	S
	<i>Anthracothonax nigricollis</i>	Black-throated Mango	BF, FE	O
	<i>Chlorostilbon mellisugus</i>	Blue-tailed Emerald	BF	O
	<i>Thalurania furcata</i>	Fork-tailed Woodnymph	BF	S
	<i>Amazilia lactea</i>	Sapphire-spangled Emerald	FE	O
	<i>Trogon melanurus</i>	Black-tailed Trogon	BF	S, O, V
Trogonidae (6)	<i>Trogon viridis</i>	White-tailed Trogon	BF	O, V
	<i>Trogon violaceus</i>	Violaceous Trogon	BF	O, V
	<i>Trogon curucui</i>	Blue-crowned Trogon	BF	O, V
	<i>Trogon rufus</i>	Black-throated Trogon	BF	O, V
	<i>Trogon collaris</i>	Collared Trogon	BF	O, V
	<i>Megaceryle torquata</i>	Ringed Kingfisher	R	O
Alcedinidae (5)	<i>Chloroceryle amazona</i>	Amazon Kingfisher	R	O
	<i>Chloroceryle aenea</i>	American Pygmy Kingfisher	BF	O
	<i>Chloroceryle americana</i>	Green Kingfisher	R	O
	<i>Chloroceryle inda</i>	Green-and-rufous Kingfisher	BF	O
	<i>Electron platyrhynchum</i>	Broad-billed Motmot	BF	O
Momotidae (3)	<i>Baryphthengus martii</i>	Rufous Motmot	BF	O
	<i>Momotus momota</i>	Blue-crowned Motmot	BF	S, O, V
	<i>Brachygalba albogularis</i>	White-throated Jacamar	BF, FE	S, O
Galbulidae (3)	<i>Galbula cyanescens</i>	Bluish-fronted Jacamar	BF	S, O
	<i>Galbula dea</i>	Paradise Jacamar	BF	O
Bucconidae (10)	<i>Notharchus hyperythynchus</i>	White-necked Puffbird	BF	V
	<i>Bucco macrodactylus</i>	Chestnut-capped Puffbird	BF	O

	<i>Bucco tamatia</i>	Spotted Puffbird	BF	O
	<i>Bucco capensis</i>	Collared Puffbird	BF	O
	<i>Malacoptila semicincta</i>	Semicollared Puffbird	BF	S
	<i>Nonnula ruficapilla</i> *	Rufous-capped Nunlet	BF	S
	<i>Monasa nigrifrons</i>	Black-fronted Nunbird	BF, FE	O, V
	<i>Monasa morphoeus</i>	White-fronted Nunbird	BF	S, O, V
	<i>Monasa flavirostris</i> *	Yellow-billed Nunbird	BF, FE	S, O
	<i>Chelidoptera tenebrosa</i>	Swallow-wing	BF, FE	O
Ramphastidae (5)	<i>Ramphastos tucanus</i>	Red-billed Toucan	BF, FE	S, O, V
	<i>Ramphastos vitellinus</i>	Channel-billed Toucan	BF, FE	O, V
	<i>Pteroglossus inscriptus</i>	Lettered Aracari	BF	S, O
	<i>Pteroglossus mariae</i>	Brown-mandibled Aracari	BF	O
	<i>Pteroglossus castanotis</i>	Chestnut-eared Aracari	BF, FE	O
Picidae (9)	<i>Melanerpes cruentatus</i>	Yellow-tufted Woodpecker	OP; FE	O, V
	<i>Veniliornis passerinus</i>	Little Woodpecker	BF	S
	<i>Colaptes punctigula</i>	Spot-breasted Woodpecker	BF	S
	<i>Celeus elegans</i>	Chestnut Woodpecker	BF	S
	<i>Celeus spectabilis</i> *	Rufous-headed Woodpecker	BF	S, V, O
	<i>Celeus torquatus</i>	Ringed Woodpecker	BF	O
	<i>Dryocopus lineatus</i>	Lineated Woodpecker	OP; FE	O, V
	<i>Campephilus rubricollis</i>	Red-necked Woodpecker	OP; FE	O
	<i>Campephilus melanoleucos</i>	Crimson-crested Woodpecker	OP; FE	O, V
Thamnophilidae (33)	<i>Cymbilaimus lineatus</i>	Fasciated Antshrike	BF	V
	<i>Cymbilaimus sanctaemariae</i> *	Bamboo Antshrike	BF	S, V, O
	<i>Taraba major</i>	Great Antshrike	BF	S, V, O
	<i>Thamnophilus doliatus</i>	Barred Antshrike	BF	S, V, O
	<i>Thamnophilus schistaceus</i>	Plain-winged Antshrike	BF	S
	<i>Thamnophilus murinus</i>	Mouse-coloured Antshrike	BF	V
	<i>Thamnophilus aethiops</i>	White-shouldered Antshrike	BF	S, V, O
	<i>Thamnomanes schistogynus</i>	Bluish-slate Antshrike	BF	S, V
	<i>Epinecrophylla leucophthalma</i>	White-eyed Antwren	BF	V
	<i>Epinecrophylla haematonota</i>	Stipple-throated Antwren	BF	V
	<i>Epinecrophylla ornata</i> *	Ornate Antwren	BF	S
	<i>Myrmotherula iheringi</i>	Ihering's Antwren	BF	S
	<i>Myrmotherula huxwelli</i>	Plain-throated Antwren	BF	V
	<i>Myrmotherula axillaris</i>	White-flanked Antwren	BF	S, V
	<i>Myrmotherula longipennis</i>	Long-winged Antwren	BF	V
	<i>Myrmotherula menetriesii</i>	Grey Antwren	BF	V, O
	<i>Dryophila devillei</i> *	Striated Antbird	BF	S, O
	<i>Cercomacra cinerascens</i>	Grey Antbird	BF	S
	<i>Cercomacra manu</i> *	Manu Antbird	BF	S
	<i>Myrmoborus leucophrys</i>	White-browed Antbird	BF	S, O, V
	<i>Myrmoborus myotherinus</i>	Black-faced Antbird	BF	S, O, V
	<i>Hypocnemis peruviana</i>	Peruvian Warbling Antbird	BF	O, V
	<i>Hypocnemis subflava</i> *	Yellow-breasted Warbling Antbird	BF	S
	<i>Percnostola lophotes</i> *	White-lined Antbird	BF	S
	<i>Myrmeciza hemimelaena</i>	Southern Chestnut-tailed Antbird	BF	S, O, V
	<i>Myrmeciza atrothorax</i>	Black-throated Antbird	BF	O, V
	<i>Myrmeciza goeldii</i> *	Goeldi's Antbird	BF	S, V, O
	<i>Myrmeciza hyperythra</i>	Plumbeous Antbird	BF	S, V
	<i>Gymnopithys salvini</i>	White-throated Antbird	BF	S, V
	<i>Rhegmatorhina melanosticta</i>	Hairy-crested Antbird	BF	O, V
	<i>Hylophylax naevius</i>	Spot-backed Antbird	BF	S, V
	<i>Willisornis poecilinotus</i>	Scale-backed Antbird	BF	O, V
	<i>Phlegopsis nigromaculata</i>	Black-spotted Bare-eye	BF	S, O, V
Grallariidae (1)	<i>Myrmothera campanisona</i>	Thrush-like Antpitta	BF	V

Formicariidae (2)	<i>Formicarius colma</i>	Rufous-capped Antthrush	BF	O, V
	<i>Formicarius analis</i>	Black-faced Antthrush	BF	S, O, V
Scleruridae (2)	<i>Sclerurus caudacutus</i>	Black-tailed Leaf-tosser	BF	S
	<i>Sclerurus albigularis</i>	Grey-throated Leaf-tosser	BF	S
Dendrocolaptidae (11)	<i>Dendrocincla fuliginosa</i>	Plain-brown Woodcreeper	BF	S, V
	<i>Dendrocincla merula</i>	White-chinned Woodcreeper	BF	O, V
	<i>Deconychura longicauda</i>	Long-tailed Woodcreeper	BF	O, V
	<i>Sittasomus griseicapillus</i>	Olivaceous Woodcreeper	BF	S
	<i>Glyphorhynchus spirurus</i>	Wedge-billed Woodcreeper	BF	O
	<i>Dendrocolaptes picumnus</i>	Black-banded Woodcreeper	BF	S
	<i>Dendroplex picus</i>	Straight-billed Woodcreeper	OP; FE	O, V
	<i>Xiphorhynchus chunchotambo</i>	Tschudi's Woodcreeper	BF	S
	<i>Xiphorhynchus guttatus</i>	Buff-throated Woodcreeper	BF	S, O, V
	<i>Lepidocolaptes albolineatus</i>	Lineated Woodcreeper	BF	V
	<i>Campylorhamphus trochilirostris*</i>	Red-billed Scythebill	BF	S
Furnariidae (10)	<i>Furnarius leucopus</i>	Pale-legged Hornero	BF	S, O, V
	<i>Synallaxis rutilans</i>	Ruddy Spinetail	BF	O
	<i>Synallaxis cherrieri*</i>	Chestnut-throated Spinetail	BF	S
	<i>Simoxenops ucayalae*</i>	Peruvian Recurvebill	BF	S, O, V
	<i>Automolus ochrolaemus</i>	Buff-throated Foliage-gleaner	BF	S, V, O
	<i>Automolus infuscatus</i>	Olive-backed Foliage-gleaner	BF	O
	<i>Automolus melanopezus*</i>	Brown-rumped Foliage-gleaner	BF	S
	<i>Automolus rubiginosus</i>	Ruddy Foliage-gleaner	BF	S
	<i>Automolus rufipileatus</i>	Chestnut-crowned Foliage-gleaner	BF	S
	<i>Xenops minutus</i>	Plain Xenops	BF	S, O
Tyrannidae (30)	<i>Mionectes oleagineus</i>	Ochre-bellied Flycatcher	BF	O
	<i>Leptopogon amaurocephalus</i>	Sepia-capped Flycatcher	BF	S
	<i>Corythopis torquatus</i>	Ringed Antpiper	BF	S
	<i>Lophotriccus eulophotes*</i>	Long-crested Pygmy Tyrant	BF	S
	<i>Hemitriccus flammulatus*</i>	Flammulated Bamboo Tyrant	BF	O, V
	<i>Hemitriccus minimus</i>	Zimmer's Tody-Tyrant	BF	S
	<i>Myiopagis gaimardii</i>	Forest Elaenia	FE	O, V
	<i>Ornithion inerme</i>	White-lored Tyrannulet	BF	O, V
	<i>Campostoma obsoletum</i>	Southern Beardless Tyrannulet	FE	O
	<i>Sublegatus modestus</i>	Southern Scrub Flycatcher	FE	O
	<i>Cnipodectes superrufus*</i>	Rufous Twistwing	BF	S, O, V
	<i>Rhynchocyclus olivaceus</i>	Olivaceous Flatbill	BF	O, V
	<i>Tolmomyias assimilis</i>	Yellow-margined Flycatcher	FE	S
	<i>Lathrotriccus euleri</i>	Euler's Flycatcher	BF	S
	<i>Onychorhynchus coronatus</i>	Royal Flycatcher	BF	S
	<i>Myiobius barbatus</i>	Whiskered Flycatcher	BF	S
	<i>Terenotriccus erythrurus</i>	Ruddy-tailed Flycatcher	BF	O
	<i>Legatus leucophaius</i>	Piratic Flycatcher	FE	O, V
	<i>Myiozetetes cayanensis</i>	Rusty-margined Flycatcher	FE	S, O, V
	<i>Myiozetetes similis</i>	Social Flycatcher	FE	S, O, V
	<i>Pitangus sulphuratus</i>	Great Kiskadee	FE	O, V
	<i>Myiodynastes maculatus</i>	Streaked Flycatcher	FE	O
	<i>Megarhynchus pitangua</i>	Boat-billed Flycatcher	FE	O, V
	<i>Eupidononvus varius</i>	Variegated Flycatcher	BF	O
	<i>Tyrannus melancholicus</i>	Tropical Kingbird	FE	O, V
	<i>Myiarchus swainsoni</i>	Swainson's Flycatcher	FE	O
	<i>Myiarchus ferox</i>	Short-crested Flycatcher	FE	S, O, V
	<i>Ramphotrigon megacephalum*</i>	Large-headed Flatbill	BF	S, V
	<i>Ramphotrigon fuscicauda*</i>	Dusky-tailed Flatbill	BF	S
	<i>Attila spadiceus</i>	Bright-rumped Attila	BF	S

Cotingidae (2)	<i>Lipaugus vociferans</i>	Screaming Piha	BF	O, V
	<i>Querula purpurata</i>	Purple-throated Fruitcrow	BF	O, V
Pipridae (5)	<i>Neopelma sulphureiventer</i> *	Sulphur-bellied Tyrant-Manakin	BF	S
	<i>Piprites chloris</i>	Wing-barred Piprites	BF	S
	<i>Pipra fasciicauda</i>	Band-tailed Manakin	BF	S, O, V
	<i>Pipra rubrocapilla</i>	Red-headed Manakin	BF	O
	<i>Schiffornis major</i>	Várzea Schiffornis	BF	O
Tityridae (4)	<i>Laniocera hypopyrrha</i>	Cinereous Mourner	BF	V
	<i>Tityra cayana</i>	Black-tailed Tityra	BF	O
	<i>Tityra semifasciata</i>	Masked Tityra	BF	O
	<i>Pachyramphus polychopterus</i>	White-winged Becard	BF; FE	S
Vireonidae (2)	<i>Cyclarhis guianensis</i>	Rufous-browed Peppershrike	BF; FE	V
	<i>Vireo olivaceus</i>	Red-eyed Vireo	BF; FE	O
Hirundinidae (2)	<i>Tachycineta albiventer</i>	White-winged Swallow	R	O
	<i>Stelgidopteryx ruficollis</i>	Southern Rough-winged Swallow	R	O
Troglodytidae (5)	<i>Microcerculus marginatus</i>	Scaly-breasted Wren	BF	O
	<i>Troglodytes musculus</i>	Southern House Wren	OP; FE	O, V
	<i>Campylorhynchus turdinus</i>	Thrush-like Wren	BF	S, O, V
	<i>Phlegopediurus genibarbis</i>	Moustached Wren	BF; FE	O, V
	<i>Cyphorhinus arada</i>	Musician Wren	BF	V
Poliophtilidae (1)	<i>Ramphocaenus melanurus</i>	Long-billed Gnatwren	BF	S
Turdidae (2)	<i>Turdus ignobilis</i>	Black-billed Thrush	OP; FE	S, O, V
	<i>Turdus hauxwelli</i>	Hauxwell's Thrush	BF	S, O, V
Coerebidae (1)	<i>Coereba flaveola</i>	Bananaquit	FE	O
Thraupidae (14)	<i>Lamprospiza melanoleuca</i>	Red-billed Pied Tanager	BF; BF	O
	<i>Habia rubica</i>	Red-crowned Ant Tanager	BF	V
	<i>Tachyphonus luctuosus</i>	White-shouldered Tanager	BF	S, O
	<i>Ramphocelus carbo</i>	Silver-beaked Tanager	FE	S, O, V
	<i>Thraupis episcopus</i>	Blue-grey Tanager	OP; FE	S, O, V
	<i>Thraupis palmarum</i>	Palm Tanager	OP; FE	S, O, V
	<i>Tangara mexicana</i>	Turquoise Tanager	BF	S, O, V
	<i>Tangara chilensis</i>	Paradise Tanager	BF	S, O, V
	<i>Tangara schrankii</i>	Green-and-gold Tanager	BF	O, V
	<i>Tangara nigrocincta</i>	Masked Tanager	BF	O, V
	<i>Tangara velia</i>	Opal-rumped Tanager	BF	O, V
	<i>Dacnis cayana</i>	Blue Dacnis	BF	O, V
	<i>Cyanerpes cyaneus</i>	Red-legged Honeycreeper	BF	O, V
	<i>Hemithraupis guira</i>	Guira Tanager	BF	O, V
Emberizidae (4)	<i>Ammodramus aurifrons</i>	Yellow-browed Sparrow	OP	S, O, V
	<i>Volatinia jacarina</i>	Blue-black Grassquit	OP	O, V
	<i>Sporophila castaneiventris</i>	Chestnut-bellied Seed-eater	OP	S, O
	<i>Sporophila angolensis</i>	Chestnut-bellied Seed Finch	OP	S, O, V
Cardinalidae (4)	<i>Saltator grossus</i>	Slate-coloured Grosbeak	BF	O
	<i>Saltator maximus</i>	Buff-throated Saltator	OP; FE	O, V
	<i>Saltator coerulescens</i>	Greyish Saltator	OP; FE	S, O, V
	<i>Cyanoloxia cyanoides</i>	Blue-black Grosbeak	BF	S
Parulidae (1)	<i>Phaeothlypis fulvicauda</i>	Buff-rumped Warbler	BF	O
Icteridae (5)	<i>Psarocolius decumanus</i>	Crested Oropendola	BF	O, V
	<i>Psarocolius bifasciatus</i>	Olive Oropendola	BF	O
	<i>Cacicus cela</i>	Yellow-rumped Cacique	OP; BF	O, V
	<i>Molothrus oryzivora</i>	Giant Cowbird	OP; BF	O
	<i>Sturnella militaris</i>	Red-breasted Blackbird	OP	S, O, V
Fringillidae (1)	<i>Euphonia chrysopasta</i>	White-lored Euphonia	BF	S

Species accounts

BLUE-HEADED MACAW *Primolius couloni*

Restricted to part of the Inambari centre of endemism (Haffer 1978, Cracraft 1985). Tobias & Brightsmith (2007) recently reviewed all records from south-west Amazonia, finding that, in Brazil, almost all records are from Acre. During the present study, MPDS observed at least six flying over pastures or perched on palm trees at the edge of the forest. The species' vocalisations were recorded twice. *P. couloni* is probably relatively common in eastern Acre.

PAVONINE CUCKOO *Dromococcyx pavoninus*

Known in Acre from the upper rio Juruá (Whittaker *et al.* 2002) and the Rio Acre Ecological Station in the east of the state. *D. pavoninus* was heard in forest almost daily, and was relatively common in the middle strata. On 13 November 2006, one was collected in the undergrowth of bamboo forest after responding to playback. This specimen (MPEG 61235) is the first from Acre.

RUFOUS-CAPPED NUNLET *Nonnula ruficapilla*

Recorded previously in Acre solely from the upper rio Juruá (Whittaker *et al.* 2002) and on the upper rio Acre in the east of the state. Our record at Jarinal is the fourth for the state of Acre, and a specimen (MPEG 61249), collected in the undergrowth of the bamboo forest, is only the second from the state.

YELLOW-BILLED NUNBIRD *Monasa flavirostris*

Records from Acre come from the rio Juruá in the west (Whittaker *et al.* 2002) and the Purus basin in the east (Rasmussen *et al.* 2005, Aleixo & Guilherme 2008). We observed the species at the edge of bamboo forest and in the canopy. It appeared to be segregated ecologically from other *Monasa*, at least partially, through its preference for the canopy rather than the understorey. A specimen (MPEG 61244) was collected on 12 November 2006, and is the first from Acre, and only the third example of this species in the Goeldi Museum collection.

RUFOUS-HEADED WOODPECKER *Celeus spectabilis*

First reported from Acre by Whittaker & Oren (1999) based on observations in *tabocais* along the upper rio Juruá. At our study site, several were observed foraging among bamboo stems. We collected three birds responding to playback on 12 November 2006. On 15 November, a fourth specimen was mist-netted. These four, two females (MPEG 61254–55) and two males (MPEG 61256–57), increases the number of specimens of this taxon in the Goeldi Museum collection to seven, all from Acre. Kratter (1997) considered the species a 'near-obligate' inhabitant of lowland bamboo forest in south-west Amazonia.

BAMBOO ANTSHRIKE *Cymbilaimus sanctaemariae*

First recorded in Acre by Pierpont & Fitzpatrick (1983), based on one collected by J. Hidasi, in 1968, in the vicinity of the city of Rio Branco (Seringal Nova Empresa). The species was subsequently recorded on the upper rio Juruá (Whittaker & Oren 1999, Whittaker *et al.* 2002). It has an easily recognised song and is very common in forest undergrowth. *C. sanctaemariae* was frequently observed following mixed-species flocks of insectivores in the understorey. Three were collected, a female (MPEG 61295) and two males (MPEG 61293–94). This is another 'near-obligate' inhabitant of south-west Amazonian bamboo forests (Kratter 1997).

ORNATE ANTWREN *Epinecrophylla ornata*

Recorded throughout most of Acre (Whittaker *et al.* 2002, Guilherme 2007). Several were observed foraging in mixed-species flocks in the undergrowth of the *tabocal* at the study site. We collected four specimens, three males (MPEG 61346–48) and a female (MPEG 61345). According to Kratter (1997), the species is a ‘facultative’ resident of bamboo forest in south-west Amazonia.

STRIATED ANT BIRD *Drymophila devillei*

Whittaker & Oren (1999) presented the first records from Acre, from the upper rio Juruá, in a riparian (*várzea*) forest with bamboo. It was subsequently recorded at Catuaba Experimental Ranch in the east of the state (Rasmussen *et al.* 2005). We collected two birds (MPEG 61349–50) that responded to playback. According to Kratter (1997) and Parker *et al.* (1997), Striated Antbird is an ‘obligate’ resident of bamboo forest. In the study area, the species used the upper stratum of the *tabocal*, and was observed within mixed-species flocks of understory insectivores.

MANU ANT BIRD *Cercomacra manu*

Known from Acre on the basis of a specimen collected on the upper rio Juruá (Whittaker & Oren 1999), Manu Antbird was recently recorded at the Rio Acre Ecological Station (A. Aleixo *in litt.* 2009). Our two specimens from Jarinal (MPEG 61336–37) are the first from the east of the state. The species is another ‘obligate’ resident of bamboo forest (Kratter 1997, Parker *et al.* 1997).

YELLOW-BREASTED WARBLING ANT BIRD *Hypocnemis subflava*

The first confirmed record in Acre was by B. M. Whitney in 1997 at Catuaba Experimental Ranch (*cf.* Isler *et al.* 2007) based on visual observations and voucher sound-recordings. It was also recorded in 2001 by EG in the Zoobotanical Park of the Federal University of Acre (UFAC). However, the first Brazilian specimens of this taxon were collected as recently as August 2005 and February 2006, at Rio Acre Ecological Station (Aleixo & Guilherme 2008). On 16 November 2006, we collected a male (MPEG 61308) in the understory of bamboo forest. The species is common in eastern Acre, and appears to replace Yellow-browed Antbird *H. hypoxantha* geographically, with the latter species apparently restricted to the west of the state, i.e. the Juruá basin (EG pers. obs.).

WHITE-LINED ANT BIRD *Pernostola lophotes*

The first records for Acre involved specimens taken on the upper rio Juruá (Whittaker & Oren 1999) and subsequently at Rio Acre Ecological Station (Aleixo & Guilherme 2008). Our specimen, MPEG 61317, collected in *tabocal* at Jarinal is the first for eastern Acre. It is a ‘near-obligate’ resident of bamboo forest in south-west Amazonia (Kratter 1997).

GOELDI’S ANT BIRD *Myrmeciza goeldii*

Occurs throughout Acre (Whittaker & Oren 1999, Guilherme 2001, Whittaker *et al.* 2002, Aleixo & Guilherme 2008). This species has an easily recognised song, and it was sound-recorded daily during our survey. Four specimens, two females (MPEG 61311–12) and two males (MPEG 61314–15), were mist-netted in the understory of *tabocal*. Goeldi’s Antbird is a ‘near-obligate’ resident of bamboo forests in south-west Amazonia (Kratter 1997).

RED-BILLED SCYTHERBILL *Campylorhamphus trochilirostris*

Occurs throughout Acre (Whittaker *et al.* 2002, Guilherme 2007). We mist-netted four specimens, all males (MPEG 61273–76), in the understorey of *tabocal*. According to Kratter (1997), the species is a ‘facultative’ resident of bamboo forest in south-west Amazonia.

CHESTNUT-THROATED SPINETAIL *Synallaxis cherriei*

The only two prior records from Acre were visual and vocal (Whittaker *et al.* 2002, Aleixo & Guilherme 2008). On 23 November 2006, we mist-netted a male (MPEG 61278) in the mid-storey of bamboo forest. This is the first specimen from Acre.

PERUVIAN RECURVEBILL *Simoxenops ucayalae*

The first specimens from Acre were collected on the upper rio Juruá (Whittaker & Oren 1999). Subsequently, a specimen was taken at Rio Acre Ecological Station by Aleixo & Guilherme (2008). A female (MPEG 61287), collected during the present study in dense *tabocal* near the Jarinal road, is the second specimen from eastern Acre, and one of only six specimens from localities across the state. At Jarinal, the species was observed twice in association with a mixed-species flock of understorey insectivores, and responded to playback. This is a ‘near-obligate’ resident of bamboo forest in south-west Amazonia (Kratter 1997).

BROWN-RUMPED FOLIAGE-GLEANER *Automolus melanopezus*

Recorded at both the western (Whittaker *et al.* 2002) and eastern (Aleixo & Guilherme 2008) extremes of the state of Acre, but only two specimens are available, making the female (MPEG 61280) mist-netted at Jarinal on 22 November 2006 only the third from Acre. Another ‘near-obligate’ resident of bamboo forest in south-west Amazonia (Kratter 1997).

RUFOUS TWISTWING *Cnipodectes superrufus*

This recently described species (Lane *et al.* 2007) was collected at the UFAC Zoobotanical Park by EG in 1998, but was misidentified as Brownish Twistwing *C. subbrunneus* (Tobias *et al.* 2008). We collected one in the undergrowth of *terra firme* bamboo forest at Jarinal on 20 November 2006, when it responded to playback. The male specimen (MPEG 61351; Fig. 2) is only the third for Brazil, and the first away from UFAC (Tobias *et al.* 2008).



Figure 2. Rufous Twistwing *Cnipodectes superrufus*, a recently described species associated with bamboo forest in south-west Amazonia; this is the first image of a live *C. superrufus* from Brazil (Edson Guilherme)

LONG-CRESTED PYGMY TYRANT

Lophotriccus eulophotes

Occurs throughout the state of Acre (Whittaker *et al.* 2002, Rasmussen *et al.* 2005, Guilherme & Dantas 2008). A male (MPEG 61327) was collected in *tabocal* on 19 November 2006, after responding to playback.

FLAMMULATED BAMBOO TYRANT *Hemitriccus flammulatus*

Occurs throughout the state of Acre (Whittaker *et al.* 2002, Guilherme 2001, 2007, Aleixo & Guilherme 2008). It was the only bamboo forest species of which no specimens were collect-

ed during the present study. However, we found it common at Jarinal, and documented its presence with sound-recordings.

LARGE-HEADED FLATBILL *Ramphotricon megacephalum*

Occurs throughout Acre (Whittaker *et al.* 2002; EG pers. obs.). Two males (MPEG 61328–29) were collected, on 13 and 20 November 2006, in the understorey of *terra firme* bamboo forest. According to Kratter (1997), the species is a ‘near-obligate’ resident of lowland bamboo forest in south-west Amazonia.

DUSKY-TAILED FLATBILL *Ramphotricon fuscicauda*

Occurs throughout Acre (Whittaker *et al.* 2002, Guilherme *et al.* 2003, Guilherme 2007). Two specimens, a male (MPEG 61330) and an unsexed individual (MPEG 61331) were collected in bamboo forest at Jarinal. This species is a ‘near-obligate’ resident of lowland bamboo forest in south-west Amazonia.

SULPHUR-BELLIED TYRANT-MANAKIN *Neopelma sulphureiventer*

Occurs throughout Acre (Whittaker & Oren 1999; EG pers. obs.). We collected a male (MPEG 61358) mist-netted in bamboo forest.

Final considerations

During the expedition reported here, we recorded and collected almost all of the south-west Amazonian bird species considered to be bamboo forest specialists. We believe that our data will contribute not only to a better understanding of these species’ geographic ranges, but also to the importance of the region’s bamboo forests for conserving the local avifauna in this unique region of outstanding biological richness.

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